

REMARKS

Applicant expresses appreciation to the Examiner for consideration of the subject patent application. This amendment is in response to the Office Action mailed March 26, 2007. Claims 1-13 are pending and stand rejected. No claims have been amended, canceled, or added in this response.

Claim Rejections - 35 U.S.C. § 103

Claims 1-3, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Matthies (U.S. Patent Application Publication No. 2005/0078104) in view of Hayashi (U.S. Patent No. 6,359,666) and Fukada (U.S. Patent Application Publication No. 2002/0044142).

Applicant respectfully traverses the rejection, as the Office Action fails to establish a prima facie case of obviousness under 35 U.S.C. § 103(a).

The Prior Art fails to Disclose All of the Elements of the Present Invention

Without admitting that combination of the references is appropriate, even when combined, the references fail to disclose all of the elements of the claimed invention.

The Office Action correctly notes that Matthies fails to disclose a pixel layer having a repeating pattern of sub-displays. The Office Action incorrectly describes Hayashi as showing “a pixel layer having a repeating pattern of sub-displays formed on a continuous pixel layer sheet” citing col. 1, lines 49-61; col. 2, lines 60-67 and col. 6, lines 61-67. Hayashi, however, has no teachings regarding the forming of sub-displays on a continuous pixel layer sheet. The cited portions of Hayashi refer to techniques for optical step-and-repeat exposure to pattern a single continuous display area, and do not teach or suggest a pixel layer having a plurality of sub-displays.

In particular, Hayashi specifically teaches that “one sheet of photomask cannot cover a liquid crystal display device pattern in the case of a larger array substrate... a display area is divided into a plurality of optical exposure regions and optical exposure is performed for each of the optical exposure regions.” What Hayashi teaches is a technique for making a single display, not an array of sub-displays. An optical exposure region is not the same thing as a sub-display as presently claimed.

The optical exposure regions of Hayashi are necessitated by manufacturing limitations (“one sheet of photomask cannot cover a liquid crystal display device pattern”) and do not speak to structural distinctions of individual sub-displays. Hayashi’s focus is on manufacturing techniques applicable to what is referred to as a “large size display” to provide consistent electrical characteristics across the display. In particular, Hayashi teaches that performing multiple optical exposures can result in unintended differences between optical exposure regions (caused by “positioning errors” (col. 2, line 5)) that affect the uniformity of the display (col. 1, line 62 – col. 2, line 28). Hayashi goes on to describe techniques to ensure that “the distance between pixel electrodes and wiring is kept substantially constant in each region so that there is no substantial phenomenon in which parasitic capacitance varies from one region to another” (col. 3, lines 58-66). Moreover, Hayashi describes how signal lines and scanning lines extend across the liquid crystal display (col. 4, lines 55-62) and extend to the edge of the display for connection to a driver (col. 6, lines 4-8). Such an arrangement is clearly a single display, and not an array of sub-displays as claimed.

This interpretation of Hayashi is further supported by Hayashi’s failure to teach or suggest a plurality of drivers, each driver in communication with a corresponding one of the sub-displays, as is presently claimed.

Accordingly, even when the teachings of cited references are combined, there is no teaching or suggestion of a large area display comprising “a pixel layer having a repeating pattern of sub-displays” and “a connection layer... with conductive traces for distributing power and data” each being formed of a continuous sheet, as claimed.

The Prior Art Fails to Suggest the Desirability of the Claimed Combination

The cited art, when viewed as a whole, merely establishes teachings that show the problems and undesirability of a large area display of the type claimed. “In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” MPEP § 2141.02(I) (citations omitted). “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” MPEP § 2141.02(II) (citations omitted). In light of the teachings of the prior art, one of ordinary skill in the art would not be lead to make the present invention.

Matthies specifically teaches the difficulty of forming a large area display (page 1, paragraph 3-10) citing problems with “fundamental technical issues that impose scaling-laws and limit the size of displays that can be manufactured” and that “defects cause manufacturing yields to diminish as the number of pixels in the display increases.” Matthies teaches the desirability of separating the display into a plurality of individual tiles (page 1, paragraph 12), stating “tiling is not subject to many of the problems that limit the size of monolithic display technologies” since “the size law is not a limiting factor because the basic unit of manufacture is relatively small.” Matthies accordingly teaches away from the present invention which claims a large area display comprising a pixel layer and connection layer formed on *continuous* sheets.

Hayashi also teaches away from the present invention. Hayashi teaches of difficulties associated with manufacturing a large area display caused by separately exposing different portions of a large display (col. 2, lines 12-28). In particular, Hayashi teaches that any inconsistencies in different areas of the display are undesirable, as this can result in unevenness in the displayed images (col. 2, lines 27-28). Accordingly, the teachings of Hayashi would lead one of ordinary skill in the art to look to techniques for forming a large area display as a single display unit, rather than as a plurality of sub-displays each with their own driver as presently claimed.

Finally, Fukuda is silent on the subject of forming large area displays.

Accordingly, one of ordinary skill in the art would not be motivated to combine or modify the cited references to achieve the present invention, irrespective of whether some aspects of the present invention are individually described or suggested in the prior art.

Additional Dependent Claims Are Allowable for At Least the Above Reasons

Claims 4-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the above cited references in combination with various other references. “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” MPEP § 2143.03 (citation omitted). As these claims are all dependent from claim 1, they are allowable for at least the above reasons.

CONCLUSION

In light of the above, Applicant respectfully submits that pending claims 1-13 are now in condition for allowance. Therefore, Applicant requests that the rejections and objections be withdrawn, and that the claims be allowed and passed to issue. If any impediment to the allowance of these claims remains after entry of this Amendment, the Examiner is requested to call Steve M. Perry at (801) 566-6633 so that such matters may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 08-2025.

DATED this 21st day of June, 2007.

Respectfully submitted,

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